

What is claimed is:

1. A PWM driving apparatus comprising:

a PWM signal generating unit for generating first PWM signals
5 and second PWM signals;

a first load-driving circuit which performs switching of
power-supplying to a first load based on said first PWM signals; and

a second load-driving circuit which performs switching of
power-supplying to a second load based on said second PWM signals,

10 wherein said PWM signal generating unit comprises a duty setting
portion for setting a duty based on command signals, a phase difference
setting portion for setting a phase difference based on said duty, and a
PWM signal generating portion for generating said first PWM signals
and said second PWM signals based on said duty and said phase
15 difference.

2. The PWM driving apparatus according to claim 1, wherein

a following formula is satisfied:

$$\phi \text{ (degree)} = 360 \text{ (degree)} \times D \text{ (\%)} / 100 \text{ (\%)}$$

20 if said phase difference is ϕ (unit is degree) and said duty is D
(unit is %).

3. The PWM driving apparatus according to claim 1, wherein

a following formula is satisfied:

25
$$\phi \text{ (degree)} = 360 \text{ (degree)} - \{ 360 \text{ (degree)} \times D \text{ (\%)} / 100 \text{ (\%)} \}$$

if said phase difference is ϕ (unit is degree) and said duty is D
(unit is %).

4. A PWM driving apparatus comprising:

a PWM signal generating unit for generating first PWM signals and second PWM signals;

5 a first load-driving circuit which performs switching of power-supplying to a first load based on said first PWM signals; and

a second load-driving circuit which performs switching of power-supplying to a second load based on said second PWM signals,

wherein said PWM signal generating unit comprises a carrier
10 signal generator for generating carrier signals which are in a saw-tooth wave pattern, a first comparator for generating the first PWM signals by comparing said carrier signals with command signals, a reverser for generating reversal carrier signals in which said carrier signals are reversed, and a second comparator for generating the second PWM
15 signals by comparing said reversal carrier signals with said command signals.

5. The PWM driving apparatus according to claim 1 or 4, wherein said first load and said second load are motor fans for being mounted in a
20 vehicle.